

# A Review of the Veterinarian's Role in the Handling of Down / Disabled Cattle

Deborah A. Stark, DVM, MBA  
Veterinary Laboratory Services Branch  
Ministry of Agriculture, Food and Rural Affairs  
Box 3612, Guelph, Ontario, N2H 6R8, Canada

## Introduction

The treatment and disposal of down or disabled livestock has always been an animal welfare concern. It is difficult to weigh the economic considerations of salvage against the negative animal welfare impact of transporting the animal to slaughter.

During the past few years, the choice between euthanasia and slaughter has grown more difficult for several reasons. Disposal choices may be limited since dead animal removal services do not exist in all areas. Entrepreneurs in some areas have established businesses collecting down cows for salvage; in most cases the owner will be paid for the animal. Finally, animal owners, veterinarians and the public are wondering if these animals are being handled humanely and if salvaging them suggests a lack of concern for both food safety and animal welfare. Governments are interested at both the provincial and federal levels. Legislation has been proposed in Ontario and some American states. In some cases, the proposal is a complete ban on the movement of these animals.

**Veterinarians are keenly interested in animal welfare issues and are contributing to the discussions and educational programs at local, provincial and federal levels, but livestock welfare begins at the farm. Besides promoting humane handling of livestock, exactly what should bovine practitioners do to help their clients deal with down cows?**

The American Association of Bovine Practitioners (AABP) has stated that bovine practitioners have three key roles in the care and handling of down/disabled animals. They are:

- to help prevent conditions leading to ambulatory problems
- to provide an early and accurate prognosis
- to recommend appropriate disposition alternatives.<sup>1</sup>

The scientific literature contains several discussions of the medical aspects of these responsibilities but

the scientific and non-scientific information have not been consolidated into one paper. In this article, I discuss each of the identified roles in further detail, review the tools available to provide an accurate prognosis, and suggest criteria to consider in determining disposition outcomes.

*Role 1. Help prevent conditions leading to ambulatory problems.*

**This is the most important responsibility in managing down cows for both practitioners and animal owners. As with any disease, prevention is the best therapy.**

Cattle can go down for several reasons. These include septicemia, toxemia, fractures, injuries, lymphosarcoma, nutritional and metabolic disturbances.

Any recommendation promoting good animal health will indirectly help to prevent down/disabled animals. Articles on herd health programs, cow comfort and nutrition are all useful resources. Good nutrition, footing and hoof care are key control measures. Minimizing calving difficulties is another important activity.

The "downer cow syndrome" is a more specific condition, generally of dairy cattle. Different authors include different criteria in describing the syndrome, but most definitions contain some or all of the following points:

- being unable to stand for a period of at least 24 hours
- being down on the sternum, as opposed to lateral recumbency
- no apparent reason for being down
- treatment for hypocalcemia has been administered

Nutrition and calving management are important factors in preventing this condition. Early detection and treatment of hypocalcemic parturient paresis should also reduce the incidence.<sup>2</sup>

*Role 2. Provide an early and accurate prognosis.*

Of the three veterinary responsibilities, this may be the most difficult to do well. Of course, a thorough

physical examination is important. Diagnosing specific disease conditions will make the prognosis clearer, but beyond that, there are few useful criteria to apply. Those that are available include the level of activity of the animal, epidemiological information, blood chemistry changes and the ability of the owner/manager to provide nursing care.

Although there were no numbers presented to support their conclusions, at least two authors believe that the activity of the cow is a significant indicator. There is a sense that cows that are "creeping", rolling or attempting to stand are more likely to get up than those who do not.<sup>3,4</sup>

In a study of 64 downer cows, Chamberlain reported that attempting to rise on day 3 might be a predictor of a positive outcome but concluded that this was of little clinical significance because the predictor is sensitive to small recording errors and is subjective.<sup>5</sup>

Statistics may be helpful. Andrews states that on average, half of all downer cows rise within four days of going down.<sup>4</sup> The prognosis is poor after seven days.

In a New York State study, down cows were 3.5 times more likely to be culled than cows without that disease.<sup>6</sup> A Minnesota study of downer cows reported that 33% recovered, 23% were slaughtered and 44% died.<sup>7</sup>

In the 1980s, there was some interest in the use of changes in blood chemistry as a predictor of outcome in down cows. Changes in creatine kinase (CK, formerly CPK) activity as an indicator of muscle damage was recognized as an important research technique, but of limited value for clinical use because the levels rise and fall during the first 1 - 2 days.<sup>3</sup>

In general, rising CK, aspartate aminotransferase (AST, formerly SGOT) and urea values suggest that muscle and other organ damage is continuing and the prognosis is deteriorating.<sup>4</sup>

Members of the British Cattle Veterinary Association visited 64 down cows 142 times during an 18-month period. Blood samples and information on clinical signs and case management were collected. Multi-factorial indicators, including quality of nursing care, attempts to rise and blood chemistry values were determined to be clinically useful on days 2 and 4.<sup>5</sup>

Perhaps the most important prognostic indicator is the willingness of the owner to provide good nursing care. If such care is not provided, the chances of success are poor.

Work done by Cox demonstrating the significance of pressure damage in the downer cow syndrome supports the theory that minimizing such damage is an important aspect of treatment.<sup>8</sup> In the Minnesota study, 75% of the respondents had experience with hip lifting devices and, of this group, 71% found them useful.<sup>7</sup> Rolling the animal from side to side is also considered important.

Other actions that will improve the prognosis include housing the cow in an area with good footing,

making sure feed and water are available, and milking fresh cows.

### *Role 3. Recommend appropriate disposition alternatives.*

Not all practitioners help decide whether to destroy or salvage an animal, yet producers indicate they would value such input.

Many times, the veterinarian is not present when the decision is made. Making disposal options a general discussion point during a routine visit would allow the practitioner to point out useful criteria that the owner could use when needed.

**An animal should only be sent for salvage if all of the following criteria are met:**

- **the animal is known to be free of conditions and animal health products that would make it unfit for human consumption.**
- **the animal can be humanely loaded and transported.**
- **the animal can be stunned prior to unloading.**

**If any of these conditions cannot be met, the animal should be humanely euthanized and disposed of according to federal, provincial and municipal regulations.**

Several livestock groups have guidelines on what constitutes humane movement of injured animals.<sup>9,10</sup> The general principles are that the animal is not dragged, but placed on some type of sled, that ramps are used as opposed to dumping, that injured animals are not commingled, and that animals are moved directly to slaughter and stunned prior to unloading.

## Conclusion

**A down cow has to be one of the most depressing sights facing a producer and veterinarian. The public is concerned that these animals are cared for properly and that the welfare of the animal is not forsaken for economic gain. The veterinarian has important roles to play in preventing, treating and disposing of such animals. It is hoped that this paper outlines some of the tools available to assist practitioners when they deal with this issue.**

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